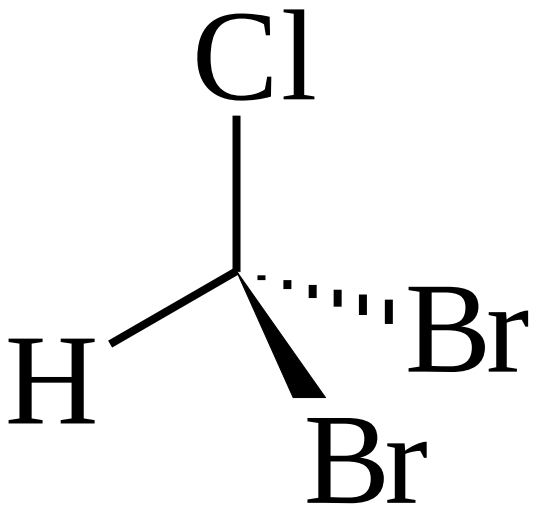
OEHHA

Chlorodibromomethane



Molecular Weight: 208.29

CAS Registry. No.: 124-48-1

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Listing History: CDBM

- Listed under Proposition 65 on January 1, 1990
- Originally classified by U.S. EPA as a Group B2 carcinogen (U.S. EPA, 1989)
- Currently classified as a Group C carcinogen (U.S. EPA, 1997)

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Reviews by Other Authoritative Bodies

- IARC (1991) - Group 3
  - *Inadequate evidence* - humans
  - *Limited evidence* - animals
- NTP (1985)
  - *Some evidence* in female $B6C3F_1$ mice
  - *Equivocal evidence* in male $B6C3F_1$ mice
  - *No evidence* in male or female F344/N rats

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Carcinogenicity Data Available: CDBM

- Mouse chronic gavage studies (NTP, 1985)
  - Hepatocellular adenomas and carcinomas in female mice
  - Hepatocellular carcinomas in male mice
- Mouse chronic oral studies (Veronin *et al.,* 1987)
  - No increased tumor incidence

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Carcinogenicity Data Available: CDBM

- Rat chronic gavage studies (NTP, 1985)
  - No increased tumor incidence
- Rat chronic dietary studies (Tobe *et al.*, 1982; as cited in U.S. EPA, 1997)
  - No increased tumor incidence

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Mouse chronic gavage studies (NTP, 1985)

Tumor Site and Type		Dose Groups		
		Control	Low-dose	High-dose
Females				
Liver	Hepatocellular adenoma or carcinoma	6/50	10/49	19/50*
Males				
Liver	Hepatocellular carcinoma	10/50	-----**	19/50***
	Hepatocellular adenoma or carcinoma	23/50		27/50

* p = 0.01

** An accidental overdose caused the death of 35 low-dose males in week 58.

*** p = 0.03

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Other Relevant Data: Genotoxicity of CDBM

Test System	Results
Salmonella typhimurium	+/-
Saccharomyces cerevisiae	+/-
Sister chromatid exchange	
Human lymphocytes in vitro, mouse bone marrow cells in vivo, rat erythroblastic leukemia cells	+
Chromosomal aberration	
Mouse lymphoma cells, Chinese hamster cells, rat bone marrow cells in vivo	+
Mouse bone marrow cells in vivo	-
***Micronucleus test**, mouse bone marrow cells in vivo*	-
***Rat liver unscheduled DNA synthesis test** in vivo*	-
***DNA strand break in rat kidney cells** in vivo*	-

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SAR with Other Trihalomethanes: Chloroform, dichlorobromomethane, and bromoform

- CDBM, chloroform and dichlorobromomethane cause liver tumors in mice
- Similar dose-response for liver tumor induction
- Mutagenicities of brominated trihalomethanes can be mediated by GST1-1. Similar mutation spectra (DeMarini *et al.,* 1997)

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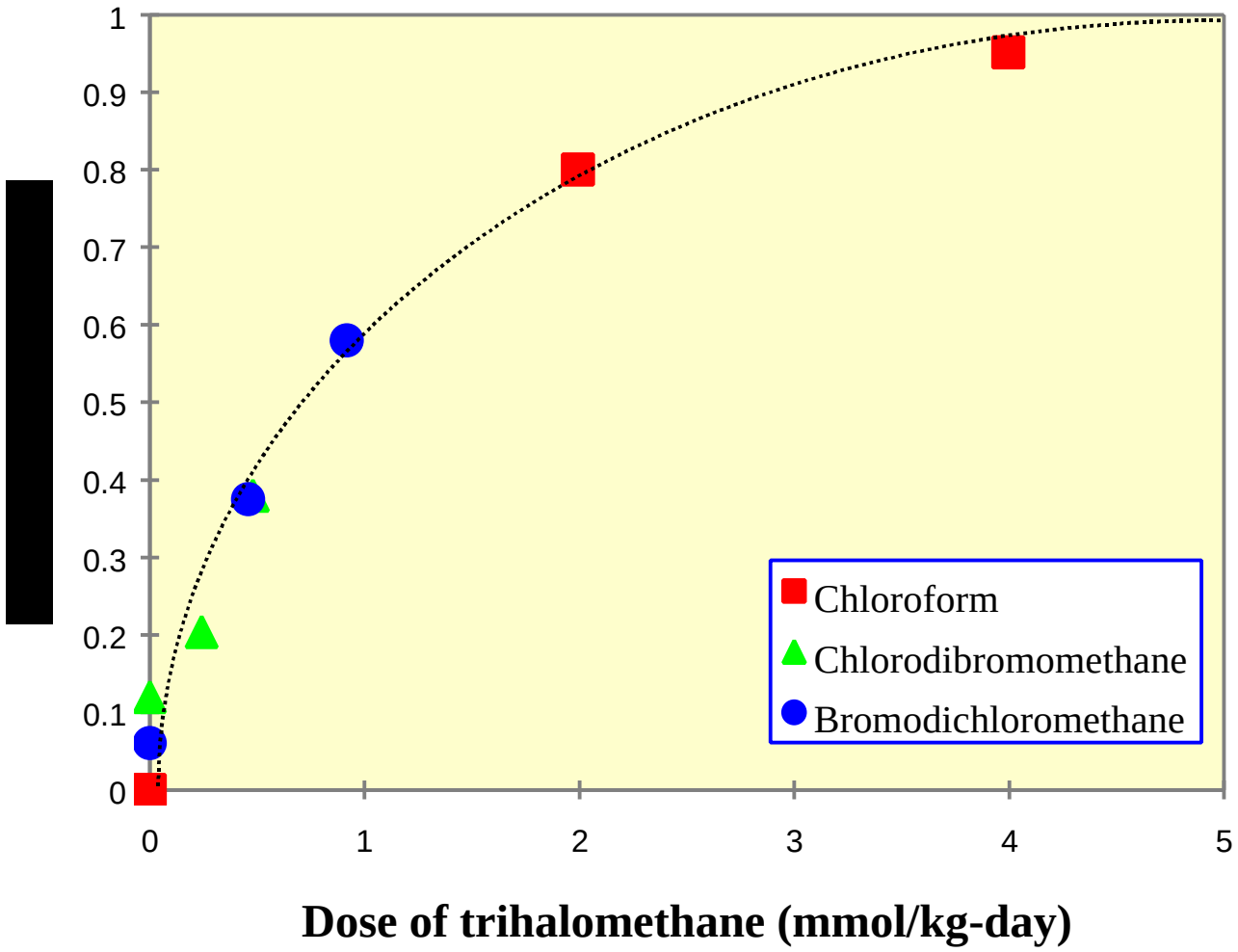
Dose-response of liver tumors with THMs



Summary: CDBM

- Liver tumors in mice
- Positive mutagenicity data
- Structural similarities with other carcinogenic trihalomethanes